

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

## **REMARKS**

In view of the above amendments and foregoing remarks, favorable reconsideration in this application is respectfully requested.

### Election / Restriction

The Examiner has indicated that claims 49 and 50 have been withdrawn from consideration. In the Examiner's restriction dated December 2, 2004, the Examiner identified the claims of Group V (claims 44, 45, 52, 58-60 and 73-75) as being directed to the selective acceptance/rejection of a message based on whether the sender address exists. On the other hand, the Examiner indicated that the claims of Group VIII (claims 48-51, 55-57, 65-72, and 80-85) are directed to the classification of e-mail addresses (though these claims appear to generally involve the verification of an e-mail address including, for instance, web sites). On February 2, 2006, Applicant elected to proceed with Group V, *i.e.*, claims 44, 45, 52, 58-60 and 73-75.

Applicant notes that claims 49 and 50 were previously dependent on claim 48, but were modified to be dependent on elected claim 44, and should be examined with elected claim 44. Claims 49 and 50 merely expand upon the acceptance/rejection of a message based on the existence of a sender address. Applicant noted that claims 49 and 50 were drawn to the elected invention in the response filed August 25, 2005 (see page 12).

In addition, Applicant notes that the newly-presented claims are directed to the elected invention. More specifically, the claims have been amended so that a decision on whether to

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

accept or reject a claim is based on the existence of the sender's address at the authorized mailhost. The claims have been amended to recite the use of a test connection, which also appears in elected claim 45 which the Examiner had grouped with elected Group V. Accordingly, it is respectfully submitted that the amended claims are directed to the elected invention and are proper for examination.

Claim Rejections – 35 U.S.C. §101

The Examiner indicates that claims 73-75 are not limited to tangible embodiments because it includes both tangible (*e.g.*, an article of manufacture) and intangible (*e.g.*, a computer-readable medium having stored thereon instructions) embodiments. Applicant disagrees that a computer-readable medium having stored thereon instructions is an intangible aspect. Without limitation, well-known computer-readable mediums include, for instance, a hard drive, diskette or CD-ROM. Those tangible items store instructions which, when performed by a processor, cause the processor to execute certain steps. It is respectfully submitted that such computer-readable mediums are clearly tangible.

In addition, even assuming *arguendo* that computer-readable mediums are intangible, as the Examiner contends, the presence of intangible elements does not render the entire claim intangible. That is, the claim presents tangible results by at least having article of manufacture. That tangible result is not negated by the presence of any intangible element. Rather, the proper analysis is to determine whether the material being stored is functional descriptive

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

material. "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized."

*See Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility*, USPTO, Annex IV, Oct. 26, 2005 (pages 1 and 50-57 of the Interim Guidelines are enclosed herewith). Since the claimed invention is clearly directed to functional descriptive material, which is statutory, the recording on an article of manufacture is also statutory.

Claim Rejection - 35 U.S.C. §102

The Examiner rejects claims 44, 45, 52, 58-60 and 73-75 as being anticipated by Leeds. Since there are two Leeds documents of record (namely, U.S. Patent No. 6,393,465 and U.S. Publication No. 2002/0016824), Applicant requests that the Examiner confirm that the Leeds '465 patent is relied upon in the Office Action.

The present invention uses discrete protocol transactions to determine if an authorized mailhost will accept e-mail for a particular address. Within the Simple Mail Transfer Protocol (SMTP), these transactions are SMTP commands such as "RCPT To:", and the authorized mailhost will respond almost immediately with a numeric response, such as "250" to indicate that the authorized mailhost will accept mail for that recipient, or "550" to indicate that the authorized mailhost will not accept mail for that recipient.

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

Leeds does not teach or suggest the claimed verification of a sender's e-mail address. The claimed invention differs from Leeds in significant ways. The Examiner refers to the teaching of Leeds, at col. 5 lines 27-28, which states that the VRFY (verification) command is used when connected to a sendmail daemon to verify that a user exists at a particular site. However, this discussion in Leeds should be understood in the context stated. Leeds specifically notes that it is merely speculating as to the "many forms" of issuing a verification request (col. 5, lines 19-20).

Consequently, this vague reference in Leeds fails to anticipate the claimed invention. Leeds does not indicate how the SMTP VRFY command is integrated within the framework of that system. The VRFY command is an SMTP transaction whose purpose is to verify a user address (*e.g.*, "VRFY smith@some.net"). (*See* Postel, Simple Mail Transfer Protocol, Aug. 1982 - reference AP of the Information Disclosure Statement filed August 9, 2000, p. 9 of 60.) Leeds makes no mention of how a VRFY command, or any of the other verification request forms, such as the "whois" command, can be used within that system.

The amended claims require that a recipient (RCPT) command or transaction is sent, and that the authorized mailhost rejects the message if the sender address does not exist at the authorized mailhost. The RCPT command and the VRFY command are not interchangeable, otherwise there would only need to be one command. The customary purpose of the RCPT command is to specify recipient addresses (*see* Postel, p. 19 of 60), not to verify addresses, and is necessary in order for a site to receive e-mail. As disclosed, the RCPT command is

conventionally used to identify the address of the intended recipient of the electronic message. (See application Fig. 2, pg. 6, lines 5-7, step 1016.) Since the RCPT is necessary in order to send e-mail to any recipient, the present invention's use of the RCPT command is highly reliable, especially as compared to the VRFY command which might be blocked for various reasons.

The present invention utilizes the RCPT command to determine if the sender address exists. The RCPT command overcomes problems with the VRFY command not being available. There are fundamental differences between Leeds' approach of sending a complete e-mail message and the present invention's use of the RCPT command on a separate test connection:

- Leeds typically requires three e-mail messages: (1) the incoming message, (2) a message back to the sender address, and (3) a non-delivery notice. In Leeds, the automatic return message to an address that does exist is an added step which is an annoyance to the sender. The present invention does not require messages (2) and (3) but instead uses protocol transactions that are invisible to a human sender to determine the existence of the sender address.
- Some sites or users may block Leeds' verification requests, *e.g.*, by content filtering, header anomalies, or a challenge response scheme. However, the current invention uses the RCPT command which is a discrete transaction that the remote host must accept if it is going to receive for a particular address.

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

- Some sites may not respond with verification responses. According to Leeds, this will result in a potentially valid message being discarded. This is not a problem with the claimed RCPT command and response. The foreign host must respond to the RCPT command in order to receive e-mail for a valid address.
- Servers using Leeds may need to store suspect messages for hours while waiting for a verification response. The present invention verifies most sender addresses within a few seconds, while the remote host is connected, and before accepting the message header and other message content.
- Leeds must distinguish between incoming messages (1) and (3), taking into account the possibility of different languages and message formats. The present invention, in contrast, receives only message (1) and immediately makes its decision based upon a numeric response observed by all mail servers on the Internet.

Leeds tests the following: (a) the Reply-To address in the message header (Figures 4 and 6a), (b) the From address in the message header (Figure 6a and Table 1), and (c) addresses in Received lines 1, 2, and 3 (Figure 6a and Table 1). However, Received lines do not typically include the sender's e-mail address, so this apparently leaves the Reply (a) and From (b) addresses. In contrast, the present invention does not test either of these addresses, but rather the sender's MAIL From address (see Figure 19, items 1911-1912, showing that the present invention tests the MAIL From address "mfaddr").

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

The MAIL From address may often be different than either the From or Reply header addresses (which themselves may be different). Further, header addresses are even more commonly and more easily forged than the sender's MAIL address. This is another significant difference between the present invention and Leeds.

Claim Rejections -- 35 USC 103

In Sections 9-15, Examiner states that claims 86-90 are rejected as being unpatentable over Leeds in view of Barchi (U.S. Patent No. 6,507,866).

The Examiner acknowledges that Leeds does not teach the use of a MAIL command or a RCPT command, but instead relies on Barchi for those teachings. However, Barchi merely restates certain ones of the interactions of the SMTP protocol, which were also identified by the present invention (*See* Preliminary Amendment, p. 2 - "As described in Request for Comments (RFC) 821, SMTP provides for the transfer of electronic mail from a sending SMTP agent to a receiving SMTP agent."; *also see* Postel). These commands are also discussed at pages 5-7 of the present application, with respect to Fig. 2.

Barchi does not teach the use of a RCPT command to determine if the sender address exists. Barchi has nothing to do with verifying addresses. Rather, Barchi addresses pattern analysis in message headers. In addition, there is nothing in either Barchi or Leeds to provide motivation for using a RCPT command to determine if the sender address exists. Indeed, Leeds teaches away from using a RCPT command because Leeds explicitly mentions the VRFY

Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

command while not mentioning the RCPT command. The RCPT command must have been known to Leeds, since both commands were available (*see* Postel) for nearly 15 years at the time of the Leeds patent. Thus, the failure of Leeds to even speculate that a RCPT command can be utilized shows the novelty and nonobviousness of the present invention.

The Examiner notes that Leeds did not teach the test protocol. (*See* Office Action, paragraph 11, 2nd sentence). In addition, the Examiner does not contend that Barchi teaches a test protocol (which it doesn't). In the absence of any teaching of a test protocol, the Examiner is without basis to conclude that the claimed invention would have been obvious.

The Examiner indicates (Office Action, paragraph 18b) that Leeds discloses protocol interactions. As discussed above, Leeds teaches the use of an unspecified e-mail server (sending MTA) to send a complete e-mail message to the sender address. Leeds only provides a vague reference to the use of a VRFY command. Leeds is silent as to how the VRFY command is implemented. Indeed, Leeds provided far more information about his PC (Leeds Figure 1) than about this protocol interactions.

Accordingly, it is respectfully submitted that the present invention is patentable over Leeds, whether considered separately or in combination with Barchi. The prior art does not teach determining whether the sender address exists based on the use of a RCPT command, as claimed. The use of a RCPT command has various advantages over Leeds which are neither disclosed nor appreciated by Leeds.



Serial No.: 09/548,322  
Atty. Docket No.: 110768.00102

In the event there are any questions relating to this Amendment or to the application in general, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that the prosecution of this application may be expedited.

Please charge any shortage or credit any overpayment of fees to BLANK ROME LLP, Deposit Account No. 23-2185 (110768.00102). In the event that a petition for an extension of time is required to be submitted herewith and in the event that a separate petition does not accompany this response, Applicant hereby petitions under 37 CFR 1.136(a) for an extension of time for as many months as are required to render this submission timely. Any fee due is authorized above.

Respectfully submitted,

BLANK ROME LLP

By: 

Peter S. Weissman  
Reg. No. 40,220

600 New Hampshire Ave., N. W.  
Washington, D.C. 20037  
Telephone: (202) 944-3000  
Atty. Docket No.: 110768.00102  
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PSW:df

## **Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility**

In the mid-1990's, the USPTO sought to clarify the legal requirements for statutory subject matter with regard to computer-related inventions. See Examination Guidelines for Computer Related Inventions, 61 Fed. Reg. 7478 (1996). Subsequent to the publication of those guidelines, the Court of Appeals for the Federal Circuit issued opinions in State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F. 3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999). These decisions explained that, to be eligible for patent protection, the claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373-74, 47 USPQ2d at 1601-02. Since this time, the USPTO has seen increasing numbers of applications outside the realm of computer-related inventions that raise subject matter eligibility issues. In order to assist examiners in identifying and resolving these issues, the USPTO is issuing these interim examination guidelines to assist USPTO personnel in the examination of patent applications to determine whether the subject matter as claimed is eligible for patent protection.

The principal objective of these guidelines is to assist examiners in determining, on a case-by-case basis, whether a claimed invention falls within a judicial exception to statutory subject matter (i.e., is nothing more than an abstract idea, law of nature, or natural phenomenon), or whether it is a practical application of a judicial exception

## ANNEX IV

### Computer-Related Nonstatutory Subject Matter

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data.

Both types of “descriptive material” are nonstatutory when claimed as descriptive material per se. Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory since no requisite functionality is present to satisfy the practical application requirement. Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored in a computer-readable medium, in a computer, on an electromagnetic carrier signal does not make it statutory. See Diehr, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in Benson were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”). Such a result would exalt form over substance. In re Sarkar, 588 F.2d 1330, 1333, 200 USPQ 132, 137 (CCPA 1978) (“[E]ach invention must be evaluated as claimed; yet semantogenic considerations preclude a determination based solely on words appearing in the claims. In the final analysis under § 101, the claimed invention, as a whole, must be evaluated for what it is.”) (quoted with approval in Abele, 684 F.2d at 907, 214 USPQ at 687). See also In re Johnson, 589 F.2d 1070, 1077, 200 USPQ 199, 206 (CCPA 1978) (“form of the claim is often an exercise in drafting”). Thus, nonstatutory music is not a computer component and it does not become statutory by merely recording it on a compact disk. Protection for this type of work is provided under the copyright law.

When nonfunctional descriptive material is recorded on some computer-readable medium, in a computer or on an electromagnetic carrier signal, it is not statutory and should be rejected under 35 U.S.C. § 101. In addition, the examiner should inquire whether there should be a rejection under 35 U.S.C. § 102 or 103. The examiner should determine whether the claimed nonfunctional descriptive material be given

patentable weight. The USPTO must consider all claim limitations when determining patentability of an invention over the prior art. In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 403-04 (Fed. Cir. 1983). The USPTO may not disregard claim limitations comprised of printed matter. See Gulack, 703 F.2d at 1384, 217 USPQ at 403; see also Diehr, 450 U.S. at 191, 209 USPQ at 10. However, the examiner need not give patentable weight to printed matter absent a new and unobvious functional relationship between the printed matter and the substrate. See In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994); In re Ngai, 367 F.3d 1336, 70 USPQ2d 1862 (Fed. Cir. 2004).

**(a) Functional Descriptive Material: “Data Structures” Representing Descriptive Material Per Se or Computer Programs Representing Computer Listings Per Se**

Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure’s functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings per se, i.e., the descriptions or expressions of the programs, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program’s functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035. Accordingly, it is important to distinguish claims that define descriptive material per se from claims that define statutory inventions.

Computer programs are often recited as part of a claim. USPTO personnel should determine whether the computer program is being claimed as part of an otherwise statutory manufacture or machine. In such a case, the claim remains statutory irrespective of the fact that a computer program is included in the claim. The same result occurs when a computer program is used in a computerized process where the computer executes the instructions set forth in the computer program. Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory. Since a computer program is merely a set of instructions capable of being executed by a computer, the computer program itself is not a process and USPTO personnel

should treat a claim for a computer program, without the computer-readable medium needed to realize the computer program's functionality, as nonstatutory functional descriptive material. When a computer program is claimed in a process where the computer is executing the computer program's instructions, USPTO personnel should treat the claim as a process claim. See paragraph IV.B.2(b), below. When a computer program is recited in conjunction with a physical structure, such as a computer memory, USPTO personnel should treat the claim as a product claim. See paragraph IV.B.2(a), below.

#### **(b) Nonfunctional Descriptive Material**

Nonfunctional descriptive material that does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. § 101. Certain types of descriptive material, such as music, literature, art, photographs and mere arrangements or compilations of facts or data, without any functional interrelationship is not a process, machine, manufacture or composition of matter. USPTO personnel should be prudent in applying the foregoing guidance.

Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. § 101. The presence of the claimed nonfunctional descriptive material is not necessarily determinative of nonstatutory subject matter. For example, a computer that recognizes a particular grouping of musical notes read from memory and upon recognizing that particular sequence, causes another defined series of notes to be played, defines a functional interrelationship among that data and

the computing processes performed when utilizing that data, and as such is statutory because it implements a statutory process.

**(c) Electro-Magnetic Signals**

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.



A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See American Disappearing Bed Co. v. Arnaelsteen, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. Lorillard v. Pons, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in American Fruit Growers when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)).

A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

These interim guidelines propose that such signal claims are ineligible for patent protection because they do not fall within any of the four statutory classes of § 101. Public comment is sought for further evaluation of this question.